

USSR

UDC 51:621.391

~~BASHLAKOV, Ye. P.~~

"Use of the Abstract Theory of Automata for Minimization of Multi-Register Automata"

Teor. Kibernetiki. vyp. 5 [Theory of Cybernetics, No 5 -- Collection of Works], Kiev, 1970, pp 59-67, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V417 by G. Blokhina).

Translation: The author basis himself on the representation of a discrete computer as a composition of two automata -- a controlling and an operating automata. The controlling automaton is analyzed as a certain finite automaton with a final state characterizing the end of operation of the corresponding microprogram. The operational automaton is an abstract automaton with an infinite set of states which, in the opinion of the author, hinders the application of the abstract theory of finite automata for its optimization. It is demonstrated in this article that abstract automata methods can be sufficiently effectively applied for the minimization of operational automata as well. The approach of the author is based on representation of an operational automaton as a multi-register automaton. The possibility of using these methods with this approach is justified by expedient limitation of the set of states of the multi-register automaton.

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UDC 669.046.5

BASHLIY, F. I., KOLGANOV, G. S., KOZIN, G. N., and AVCRONOV, Yu. F.

"Quality of Metal Produced With Bath Oxygen Blowing"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS) (Collection of Works, Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 107-110

Translation of Abstract: Results are presented of an investigation of the effect of oxygen blowing on metal acidity. Attention is given to the method of subdeoxidation of low-carbon steels by silicon with the purpose of lowering the metal acidity and reducing the development of gas bubbles. 2 figures, 3 tables, 6 references.

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USSR

UDC 621.039.542.3:541.11

AKHACHINSKIY, V. V., and BASHLYKOV, S. N.

"Thermodynamics of Uranium-Carbon, Uranium-Nitrogen, and Plutonium-Carbon Systems"

Moscow, Atomnaya energiya, Vol 29, No 6, Dec 70, pp 439-447

Abstract: This paper is a survey of various works on the thermodynamics of UC, U_2C_3 , and UC_2 , and other uranium carbides, discussing their thermal capacitances and content at high and low temperatures as well as their formation enthalpy and free energy. The same is done for UN and such plutonium carbides as $PuC_{0.95}$ and Pu_2C_3 . With regard to the first class of compounds, the authors complain that the measurements conducted by researchers on the free formation energy are often for limited intervals of temperature and show marked divergences which make comparison difficult. They suggest that one cause of this divergence in results in the measurement of vapor pressure may be oxygen contamination, especially when the material measured is in powder form. Two methods of measuring the heat of formation of UN are given, the preferred one through the heat developed in the reaction $U + 1/2N_2 \rightarrow UN$. With regard to the measurement of free formation energy of the $1/2$

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AKHACHINSKIY, V. V., and BASHLYKOV, S. N., Atomnaya energiya, Vol 29, No 6,
Dec 70, pp 439-447

plutonium carbides, it is stated that the results of vapor pressure measurements are preferred to data obtained by the emf method because of good agreement with the results of various researchers and compatibility with thermic data. A good deal of information is given in the form of tables and curves.

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USSR

UDC 536.24:532.526

BASHMAKOV, I. V.

"On the Nature of Instantaneous Flow in a Turbulent Nonisothermal Boundary Layer With High-Frequency Pressure Pulsations of Finite Amplitude"

Tr. Un-ta druzhby narodov im. Patrisa Lumumby (Works of the University of People's Friendship imeni Patrice Lumumba), 1972, Vol. 61, pp 50-67 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B862)

Translation: Nonstationary flow in an isothermal boundary layer under the action of periodically changing velocity in the external flow is investigated. The case of high frequency pulsations ($u_{\infty}/L_w \ll 1$) is discussed when one can neglect nonlinear convective terms in the equation for the pulsation velocities. In this case the change in amplitude and phase of the velocity pulsations across the boundary layer is associated only with forces of viscosity and the variability in density. Assuming similarity of the velocity and temperature profiles, an expression is obtained for the density profile in the laminary boundary layer that is a function of the relative temperature of the wall. In this case one can integrate the linearized equation for the pulsation velocity and obtain an analytical solution for its profile across the boundary layer. In considering
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BASHMAKOV, I. V., Tr. Un-ta druzhby narodov im. Patrisa Lumumby, 1972,
Vol. 61, pp 50-67

the turbulent nonisothermal boundary layer, the author attempts to find the effect of the temperature factor on the shape of the portion of the velocity profile near the wall on the basis of many rough assumptions and considering this effect, determine the density profile. Results of calculations of amplitudes and phase shifts are compared with known experimental data obtained for an isothermal turbulent boundary layer in a pulsating flow. 6 ref. A. N. Sekundov.

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Acc. Nr: AP0047357

Ref. Code: UR0589

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970,
Vol 104, Nr 1, pp 102-107

POSTOPERATIVE ANESTHESIA IN CARDIAC SURGERY

V. S. Sergiyevskiy, and A. L. Bashmatov

In 198 patients after various cardiac operations the following types of postoperative anesthesia were employed: subcutaneous injection of nitrogen monoxide (65 patients), intracostal blockade with a mixture of local anesthetics (53 cases), continuous blockade of the thoracic sympathetic ganglia through an indwelling catheter (40 patients), and continuous peridural anesthesia (30 patients). The analysis has demonstrated that anesthesia used in the main group enabled to avoid utterly pulmonary complications, while in a control group these were noted in 12 cases. A favourable effect of the used narcosis on the external respiration function and gas metabolism was observed.

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USSR

UDC 532.526.4

POLYAYEV, V. M., BASHMAKOV, I. V., GERASIMOV, I. M., and VLASOV, D. I.

"Spectral Measurements in a Turbulent Boundary Layer of a Permeable Plate in Blasting"

Minsk, Inzhenerno-fizicheskiy zhurnal, No 6, 1973, pp 1109-1113

Abstract: Investigation of the turbulence structure in a boundary layer under blasting is important in connection with developing efficient methods of thermal protection. This paper describes detailed experiments in thermoanemometric measurements of the averaged and pulsation characteristics of a boundary layer in a flat model 2.5 m long and 400 mm wide with a blast flow velocity of 10 m/s. Instruments included an A-10 aerodynamic tube of the Moscow State University Institute of Mechanics, a constant-temperature thermoanemometer of the "DIEA" type, and a spectrum analyzer. Results of the measurements and a description of the experimental apparatus and method are given in earlier papers by most of the authors named above (e. g., Polyayev, V. M., et al, Termoanemometricheskiye issledovaniya turbulentnogo nozranichnogo sloya na prchnitsayemoy plastine pri vduve -- Thermoanemometric investigation of

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POLYAYEV, V. M., et al, Inzhenerno-fizicheskiy zhurnal, No 6, 1973, pp 1109-1113

of a Turbulent Boundary Layer in a Permeable Plate Under Blasting -- in the collection Trudy IV Vsesoyuznogo soveshchaniya po teplo- i massoperenosu, vol 1, Minsk, 1972). In these experiments, data was obtained on the intensity distribution of longitudinal, transverse, and sidewise velocity pulsations under the blasting, and of turbulent tangential stresses on the layer. The latter indicate vortical distortions in the layer.

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USSR

UDC 532.517.4

POLYAYEV, V. M., BASEMAKOV, I. V., and VLASOV, D. I., Moscow
Higher Technical School imeni N. E. Bauman

"The Measuring of Velocity Profiles in the Turbulent Boundary
Layer on a Permeable Plate"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 2,
Mar-Apr 72, pp 342—346

Abstract: The results of the investigation of velocity profiles in the turbulent boundary layer on a permeable plate in a subsonic wind tunnel by 10 m/sec flow velocity and relative blast velocities from 0.0038 to 0.0538 are discussed. A constant temperature hot-wire anemometer ("DISA") in a set with single-thread-type pick-ups was used for measuring the velocity profiles. The tungsten thread with platinum coating was $5/\mu$ thick and 1 mm long. The measuring method and the processing of experimental data are described. The velocity profile by transverse blast can be characterized with the help of a known logarithmic rule, if an interpolation dependence discounting for the blast effect on the outer region of the vortex wake is considered. The measurements confirm the structural conservatism of the forced back turbulent kernel and, at the same time, also the notable deformation of the velocity profile in the outer region of the boundary layer. Six illustr., four formulas, two biblio. refs.

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1/2- 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DEHYDRATION AND DESALTING OF PETROLEUM EMULSIONS -U-
AUTHOR--(05)-BULSHEV, S.F., BASHENOV, YU.M., KRYLOV, O.A., BASHMAKOV, P.V.,
DONCHENKO, N.A.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 263,794
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CHEMICAL-PATENT, SURFACTANT, PETROLEUM EMULSION, PETROLEUM
DESALTING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0887 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0132977
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AA0132977
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PETROLEUM EMULSIONS ARE DESALTED
AND DEHYDRATED, REDUCING CORROSION OF PETROLEUM EQUIPMENT, BY
INTRODUCING POLYETHYLENIMINE AS A SURFACTANT.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INFLUENCE OF ALUMINUM, CADMIUM, AND COPPER IMPURITIES ON THE
BAUSCHINGER EFFECT IN THE TWINNING OF ZINC SINGLE CRYSTALS -U-
AUTHOR-(02)-RASHMAKOV, V.I., YAKOVENKO, N.G.
COUNTRY OF INFO--USSR
SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(2), 231-6 (RUSS)
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ALUMINUM CONTAINING ALLOY, CADMIUM CONTAINING ALLOY, COPPER
CONTAINING ALLO, BAUSCHINGER EFFECT, ZINC, METAL SINGLE CRYSTAL,
TWINNING, METAL IMPURITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1930 STEP NO--UR/0185/70/015/002/0231/0236
CIRC ACCESSION NO--AP0118892
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118892

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF AL, CD, AND CU IMPURITIES ON THE BAUSCHINGER EFFECT IN THE TWINNING OF ZN SINGLE CRYSTALS WAS STUDIED. THESE IMPURITIES CAUSE CHANGES IN THE QUANT. CHARACTERISTICS OF THE EFFECT: BBETA BAUSCHINGER DISPLACEMENT OF THE TWIN BOUNDARIES AND RELATION σ_{SUB1} - σ_{SUB0} , WHERE σ_{SUB0} IS THE STRESS AT WHICH TWINNING IS INTERRUPTED AND σ_{SUB1} IS STRESS OF OPPOSITE SIGN AT WHICH DE TWINNING BEGINS. THE IRRESISTIVE BARRIERS WERE FORMED FOR THE TWINNING DISLOCATIONS BY THE AL AND CD IMPURITIES. THE DIFFERENT INFLUENCE THAT THESE IMPURITIES EXERT IS ASSOC. WITH THEIR STACKING FAULT ENERGIES. EXPOSING THE TWINNED SINGLE CRYSTALS OF THE ZN PLUS CU ALLOY TO PB SUPPRESSES THE BAUSCHINGER EFFECT.
FACILITY: KHAR'KOV. INST. OBSHCHEST. PITAN., KHARKOV, USSR

UNCLASSIFIED

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Foundry

USSR

UDC 669.185.1

NIKIFOROV, B. V., SMOKTIY, V. V., GUL'YEV, G. F., ORLOV, V. S.,
SIZENKO, A. S., SAPRONOV, YU. YA., KOLESNIK, V. D., BASHTAROV,
YU. V., RUDNITSKIY, YA. N., PAYERSTEYN, A. D., KAGAN, I. I.,
Institute of Ferrous Metallurgy in Dnepropetrovsk and Krivoy
Rog Metallurgical Plant

"Operating Experience With a 55-Ton Converter With Increased
Blowing Rate"

Moscow, Stal', No 3, Mar 70, pp 215-218

Abstract: Metallurgists of the Institute of Ferrous Metallurgy
in Dnepropetrovsk and Krivoy Rog Metallurgical Plant have
developed a technique for smelting in 55-ton converters with
the oxygen feed rate almost doubled from 2.8-3 to 5-6 cu m/t
per minute. A new-type tuyere is used, the nose of which has
two rows of concentrically arranged nozzles with independent
oxygen feed to each row. The increased blowing rate improves
slag formation. The yield of acceptable product and the degree
of improvement in slag formation are determined by the struc-
tural characteristics of the noses. Nose No. 5 was found to be
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NIKIFOROV, B. V., et al., Stal', No 3, Mar 70, pp 215-218

the most effective of all those tested. The use of a tuyere with nose No. 5 reduces the blowing time by 40 percent and increases converter productivity by 20.5 percent. Steels K St. 5sp, K St. 3sp, 35GS, K St. 5 ps, K St. 3ps, K St. 0m, 08kp, 10kp, K2, K3, KExp., K3khr, T, and Sv-08A were obtained without any decrease in the yield of acceptable product, deterioration of metal quality, or decrease in refractory lining resistance. In newly designed shops provision should be made for a gas circuit capacity and oxygen feed system sufficient for the operation of converters with a blowing rate of 5-6 cu m/(t. min).

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USSR

UDC: 537.311.33

BASHMAKOVA, M. I., Dnepropetrovsk Construction Engineering Institute

"Change in Electrical Conductivity of Organic Semiconductors Near the Melting Point"

Tomsk, Izvestiya VUZov: Fizika, No 4(131), 1973, pp 55-59

Abstract: The paper discusses the results of experiments relating to the variation, with temperature, of electrical conductivity of several aromatic organic compounds close to the melting point within the framework of the semiconductor band model. The specific electrical conductivity of the investigated class of compounds ranged from 10^{-15} to $10^{-21} \Omega^{-1} \cdot \text{cm}^{-1}$, and thermal activation energies for the solid and liquid state respectively were $\epsilon_{\text{sol}} = 2.3^4\text{--}3.7 \text{ eV}$ and $\epsilon_{\text{liq}} = 0.78\text{--}1.6 \text{ eV}$. It is shown that the electrical conductivity of the given group of compounds is determined by the binding energy of molecular compounds and decreases with an increase in melting point. It is found that the Mott theory is valid for anthracene, phenanthrene, and naphthalene. The ratio $\sigma_{\text{sol}}/\sigma_{\text{liq}}$ as a function of the change in thermal activation energy as determined by Gubanov for inorganic semiconductors (A. I. Gubanov, Kvantovo-1/2

USSR

BASHMAKOVA, M. I., Izvestiya VUZov: Fizika, No 4(131), 1973, pp 55-59

elektronnaya teoriya amorfnykh poluprovodnikov [Quantum Electronic Theory of Amorphous Semiconductors], Moscow-Leningrad, 1963) is satisfied for organic compounds when ΔE is no more than 2 ev. Analysis of the experimental results and comparison with theoretical calculations show that the band theory is applicable to organic semiconductors when the nature of conductivity is similar for the solid and liquid states and there is little change in the thermal activation energy.

1/2 032 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ANNEALING OF LARGE FORGED PIECES OF ROTOR SHAFTS -U-
AUTHOR--BASHNIN, YU.A., KOROVINA, V.M., PAISOV, I.V. *B*
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(1), 151-5
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL FORGING, HYDROGEN, FERROUS LIQUID METAL, SHAFT, TURBINE
ROTOR, OPEN HEARTH FURNACE, ANNEALING, VACUUM CASTING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1986/1007 STEP NO--UR/0148/70/013/001/0151/0155
CIRC ACCESSION NO--AT0102941
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AT0102941

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ORDER TO VERIFY THE TIME REQUIRED FOR ANNEALING LARGE FORGINGS (50-100 TONS) ONE FORGING OF A SHAFT DIAM. 1120 MM WAS FOLLOWED AS TO TEMP. CHANGES (AT DISTANCE 30, 250, AND 500 MM FROM THE SURFACE) DURING THE WHOLE CYCLE OF HEAT TREATMENT OPERATION. THE EQUALIZATION OF TEMP. TO 630-500DEGREES REQUIRED 27 HR, WHILE TO 890-900DEGREES ONLY 25 HR. COOLING OF THE CENTER TO 240-80DEGREES REQUIRED 80 HR. THE COOLING RATE DEPENDING ON THE DISTANCE FROM THE SURFACE 30 MM TEMP. INTERVAL 900-500DEGREES; COOLING RATE 160DEGREES-HR, TEMP. INTERVAL 500-200; COOLING RATE 18DEGREES-HR; DISTANCE FROM THE SURFACE 500 MM. TEMP. INTERVAL 900-420DEGREES, COOLING RATE 48DEGREES-HR, TEMP. INTERVAL 420-280DEGREES, COOLING RATE 14DEGREES-HR. IN ANOTHER EXPT. STEEL FROM ACID OPEN HEARTH MELTING, AND DEOXIDIZED WITH SI, WAS CAST IN VACUUM INTO 140 TON INGOTS AND ANNEALED WHILE DETN. H: IN LIQ. METAL THE H WAS 4.0, BEFORE ANNEALING 1.8-2.5, AFTER ANNEALING 1.0-2.0 CM PRIME3-100 G. AS A CONCLUSION IT WAS RECOMMENDED TO SHORTEN THE ANNEALING TEMP. EQUALIZATION TIME FROM 40 TO 27 HR, WHILE THE COOLING IN AIR FROM RECRYSTN. TEMP. WAS SHORTENED FROM 75 TO 45-50 HR.

UNCLASSIFIED

USSR

UDC 624.07:534.1

MATVEYEV, V. V., BASHTA, O. T.

"On Testing the Correctness of an Experiment to Study Energy Scattering in the Material of Rods Under Vibrations"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sistem (Energy Scattering Under Oscillations of Mechanical Systems -- Collection of Works), Kiev, "Nauk. dumka", 1972, pp 172-178 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V268)

Translation: The effect of structural energy losses at points of reinforcement of a test sample on the decrement in bending and torsional vibrations is evaluated. A polynomial functional dependence between energy scattering at points of reinforcement and the amplitude of the bending or torsional (respectively) moment in the root cross section of the rod is assumed in accordance with known experimental results. Experimental results for a series of samples with different dimensions were processed using the resulting semiempirical relationships between the decrement and the parameters of the test sample. It is pointed out that the role of energy scattering in the

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MATVEYEV, V. V., BASHTA, O. T., Rasseyaniye energii pri kolebaniyakh mekh. sistem, 1972, pp 172-178

seals under bending oscillations is inconsiderable in the experiments conducted and that losses in the seals play a predominant role for the type of reinforcement of the sample under torsional vibrations. 9 ref. Yu. G. Balakirev.

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USSR

UDC 534.282

MATVEYEV, V. V., BASHTA, O. T., Kiev

"The Significance of Energy Losses in the Surface Layers of a Material in Studying the Influence of Rod Dimensions on Damping of Oscillation"

Kiev, Problemy Prochnosti, No 5, May, 1971, pp 23-29.

Abstract: Formulas are concluded for calculation of the logarithmic oscillation decrement of specimens of various sizes considering the singular properties of the surface layer. The cases of bending longitudinal and twisting oscillations of specimens are considered, when the energy dissipated in an oscillating cycle in the surface layer and main mass of the rod material is related to the amplitude of cyclical deformation by an exponential dependence.

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USSR

Marine and Shipbuilding

.BOOKS

532.520

YEGOROV, I. T., SADOVNIKOV, Yu. M., ISAYEV, I. I., BASIN, M. A.
ISKUSSTVENNAYA KAVITATSIYA (Artificial Cavitation), Leningrad "Sudostroeniye"
1971, 283 pp, illus, formulae, biblios, 1,850 copies printed

Results are given of research in supercavitation, natural and artificial ventilation of various lifting surfaces. The book does not pretend to be a full survey of research in this area of hydromechanics, but contains primarily the data obtained in recent years by the authors. It is intended for use by scientific associates and technicians working in the design offices and scientific research organizations in the ship-building industry, but can also be useful to students in the higher technical schools majoring in hydromechanics and marine engineering.

Contents

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| Foreword | |
| Chapter I. Physical peculiarities of Natural and Artificial Cavitation (written by I. T. Yegorov) Describes and classifies cavitation phenomena, prospective applications of artificial cavitation, general problem and theoretical analysis of the phenomena, and methods of producing artificial gas cavities on surfaces | 3-4 5-22 |

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USSR

YEGOROV, I.T., et al, ISKUSSTVENNAYA KAVITATSIIYA (Artificial Cavitation), Leningrad 1971.

- Chapter II. Natural and Artificial Cavitation of Hydrofoils (written by M. A. Easin) discusses hydromechanics of supercavitating and ventilated hydrofoils 23-96
- Chapter III. Controlling the Lift of Cavitating Foils. Ventilation of Bodies During Interaction With the Free Surface of the Water (written by I. T. Yegorov) Discusses methods of regulating the cavitating cavity in order to vary the hydrodynamic characteristics of lifting surfaces, and touches upon certain forms of natural and artificial ventilation of bodies during interaction with the free surface of the water 99-156
- Chapter IV. Artificial Cavitation During Motion of a Body Near the Free Surface of the Water (written by I. I. Issayev) Gives results of theoretical and experimental research on the subject 157-224
- Chapter V. Hydrodynamic Characteristics of Propellers During Artificial Cavitation (written by Yu. M. Sadovnikov) Contains material on research on artificial cavitation of propellers and on the interaction of propellers, operating under these conditions, in conjunction with the lifting elements of hydrofoil ships 225-281

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1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--USE OF THE DEVICE FERMENT I FOR IDENTIFYING MICROORGANISMS
ACCORDING TO THEIR PROTEOLYTIC ACTIVITY -U-
AUTHOR--(04)--ANDREYEV, V.S., MATYKO, N.A., BASHTANOV, A.V., MARCHENKO, L.A.
COUNTRY OF INFO--USSR
SOURCE--MED. TEKHN. 1970, 4(1), 16-17
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MICROORGANISM, AMMONIA, BIOSYNTHESIS, BACTERIOLOGIC LABORATORY
INSTRUMENT, ELECTRIC CONDUCTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0460 STEP NO--UR/0451/70/004/001/0016/0017
CIRC ACCESSION NO--AP0132675
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132675

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DEVICE IS DESCRIBED FOR THE IDENTIFICATION OF THE ACTIVITY OF NH SUB3 PRODUCING MICROORGANISMS. IT IS BASED ON THE CONTINUOUS REGISTRATION OF THE INCREASE OF ELEC. COND. (V. S. ANDREEV, V. I. ROSENGART, AND V. A. TORUBAROV, 1965) IN AN ELEMENT CONTG. THE BUFFERED GROWTH MEDIUM (PEPTONE). THE RESULTS ARE CHECKED BY A PARALLEL EXPT. CARRIED OUT IN THE PRESENCE OF A SPECIFIC NH SUB3 TRAPPING REAGENT (KI, NA SUB2 HPO SUB4, OR NAH SUB2 PO SUB4) PREVENTING THE INCREASE INCONDUCTIVITY DUE TO THE LIBERATION OF NH SUB3 (BASE LINE). THE METHOD IS EASY, AND TIME SPARING IN COMPARISON TO THE CONVENTIONAL ANAL. METHODS. FACILITY: LENINGRAD. FILIAL VSES. NAUCH.-ISSLED. INST. MED. PRIBOROSTR., LENINGRAD, USSR.

UNCLASSIFIED

Aerosols

USSR

UDC: 615.014.83:666.25

NEUGODOV, P.P., BASHURA, G.S., TELLERMAN, L.S., MDGVARELI, V.A., Khar'kov Scientific Research Chemico Pharmaceutical Institute, Kharkov, Ministry of Health Ukrainian SSR

"Coating Glass Aerosol Cylinders With Protective Polymeric Films"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 2, Feb 70, pp 37-42

Abstract: Glass cylinders, when manufactured to quality standards, can withstand very high pressure, usually exceeding 40 kg/cm². Optimal cylinder configuration ensuring the best combination of strength and use convenience was determined experimentally -- the shape of a spindle with flat bottom and top opening for the valve. However, cylindrical and oval shapes also meet basic requirements. Plastic coatings of powdered polymers are deposited and the cylinders are placed in an oven to fuse the coating, and then cooled. Optimal thickness of the coatings varies from 0.8 to 1 mm, rupture strength is 96 kg/cm², and relative elongation is 180-250 percent.

USSR

UDC 576.8.078.39

MARCHENKO, L. A., ANDREYEV, V. S., MATYKO, N. A., and BASHTANOV, A. V., Leningrad Branch, All-Union Scientific Research Institute of Medical Instrumentation

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200310016-6"

"The 'Ferment-1', a Device for Identifying Microorganisms by Their Proteolytic Activity"

Moscow, Meditsinskaya Tekhnika, No 1, 1970, pp 16-17

Abstract: The proposed device is based on the release of ammonia microorganisms, E. coli in particular, under the influence of proteolytic enzymes. The amount of ammonia released is recorded in a high-frequency conductometric apparatus that uses a differential scheme of measurement in recording the electrical conductivity of a solution under study. The procedure takes 30-40 min, a fraction of the time required to identify ammonia by the conventional biochemical methods. The device was tested on an E. coli culture that does not form ammonia. The electrical conductivity of solutions with and without a specific reagent did not change.

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1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--POLYMER COATING OF GLASS AEROSOL BALLOONS --U-
AUTHOR--(04)--NEUGODOV, P.P., BASHURA, G.S., TELLERMAN, L.S., MDGVARELI,
V.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM.--FARM. ZH. 1970, 4(2), 37-42
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PLASTIC COATING, GLASS COATING, AEROSOL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1359 STEP NO--UR/0450/70/004/002/0037/0042
CIRC ACCESSION NO--AP0125007
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125007

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A REVIEW WITH 15 REFS. ON THE

FACILITY:

MANUF. OF POLYMER COATED GLASS CONTAINERS FOR AERGSOLS.

KHAR'KOV. NAUCH.-ISSLED. KHIM.-FARM. INST., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 577.1.612.12.015

MEL'NIKOVA, V. A., and BASIAK'YAN, I. A.

"Study of the Content of Macromolecular Compounds and the Continuous Cultivation of Typhoid Bacteria. Report III. Comparative Study of Physiological Activity and Content in the Cells of Nucleinic Acid and Protein Under Conditions of Excess Glucose and Its Full Utilization"

Zh. mikrobiol. epidemiol. i immunobiol. (Journal of Microbiological Epidemiology and Immunobiology), No 2, 1973, pp 11-16 (English Resume) (From RZh-Biologicheskaya khimiya, No 12, Jun 73, Abstract No F1623)

Translation: It was found that in the continuous cultivation when glucose is fully utilized, the activity of cells and their DNA and RNA content depend solely on the rate of growth which is equal to the rate of dilution which can be altered to produce a population with certain given properties. When there is an excess of the substrate, the rate of consumption of glucose and the content of DNA and RNA and protein in the cells depends not only on the growth rate but also on the concentration of microorganisms. Optimal concentrations of microorganisms in which the highest content of macromolecular compounds and the highest physiological activity of cells are within the range of 0.2-1.2 billion/ml.

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USSR

UDC 577.1.612.12.015

MEL'NIKOVA, V. A., and BASIAK'YAN, I. A.

"Study of the Content of Macromolecular Compounds and the Continuous Cultivation of Typhoid Bacteria. Report III. Comparative Study of Physiological Activity and Content in the Cells of Nucleinic Acid and Protein Under Conditions of Excess Glucose and Its Full Utilization"

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USSR

UDC 518.517.91./94

BASIK, V. A., Belorussian State University imeni V. I. Lenin

"On the Solution of Boundary Value Problems with Inseparable Conditions for Second-Order Differential Equations"

Minsk, Vestsi Akademii Nauk BSSR, Series on Physical-Mathematical Sciences, No 473, pp 32-41

Abstract: This work applies the orthogonal trial method to solve difference equations occurring in approximations by the method of a network of boundary value problems with inseparable conditions for ordinary second-order differential equations. A similar technique was applied by Monastyrnyy in No 2 of this Journal for 1967. Two methods are used, "dual" trials and "cyclic" trials.

The differential equation and its conditions, represented on a set of points $(n+\frac{1}{2})h$, $(n=1,0,\dots,N, h=\frac{1}{N})$, is approximated by a difference problem. If the coefficient of the undifferentiated term is greater than or equal to zero, the dual trial method is applied. The recurrent relationships used in this case are stable with respect to rounding errors. If the coefficient is negative or changes its sign over the interval of integration, this stability can be lost and singular points can appear in calculating the trial coefficients.

USSR

BASIK, V. A., Vesti Akademii Nauk BSSR, Series on Physical-Mathematical Sciences, No 473, pp 32-41

The variation of the orthogonal trial method used in this article is free of this defect.

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- 8 -

USSR

B
UDC: 621.382 3

BASILADZE, S. G.

"Computing Integral Recording and Counting Systems with MOS Transistors of One Type"

Kiev, Izvestiya Vuzov SSSR--Radioelektronika, Vol 13, No 3, 1970, pp 381-388

Abstract: The systems mentioned in the title must be connected to the memory subsystem, consisting of flip-flop storage cells, for realization of the integral memory block of MOS transistors. This article is based on an earlier article by the same author published in the same journal named above (1970, Vol 13, No 1) in which the parameters of such a subsystem, made up of MOS transistors, were computed. The purpose of these systems is to decouple the MOS memory subsystem from the capacitance of the external connecting leads. The systems are thus acting as rather powerful output switches operating into a capacitance load. The purpose of the present paper is to derive a method of computing
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BASILADZE, S. G., Izvestiya Vuzov SSSR--Radioelektronika, Vol 13,
No 3, 1970, pp 381-388

such switches. Circuits of the two systems and the subsystem are given and are mathematically analyzed. The author finds that connecting the recording and counting systems into the memory subsystem reduces the counting process time from more than two microseconds to 0.5 microseconds.

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1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--COMPUTING INTEGRAL RECORDING AND COUNTING SYSTEMS WITH MOS
TRANSISTORS OF ONE TYPE -U-
AUTHOR--BASILADZE, S.G. *B*
COUNTRY OF INFO--USSR
SOURCE--KIEV, IZVESTIYA VUZOV SSSR, RADIOELEKTRONIKA, VOL 13, NO 3, 1970,
PP 381-388
DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--COMPUTER MEMORY, FLIP FLOP CIRCUIT, CIRCUIT DESIGN, TRANSISTOR
CIRCUIT, COUNTING CIRCUIT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1958

STEP NO--UR/0452/70/013/003/0381/0388

CIRC ACCESSION NO--AP0130739

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130739

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYSTEMS MENTIONED IN THE TITLE MUST BE CONNECTED TO THE MEMORY SUBSYSTEM, CONSISTING OF FLIP FLOP STORAGE CELLS, FOR REALIZATION OF THE INTEGRAL MEMORY BLOCK OF MOS TRANSISTORS. THIS ARTICLE IS BASED ON AN EARLIER ARTICLE BY THE SAME AUTHOR PUBLISHED IN THE SAME JOURNAL NAMED ABOVE (1970, VOL 13, NO 1) IN WHICH THE PARAMETERS OF SUCH A SYBSYSTEM, MADE UP OF MOS TANSISTORS, WERE COMPUTED. THE PURPOSE OF THESE SYSTEMS IS TO DECOUPLE THE MOS MEMORY SUBSYSTEM FROM THE CAPACITANCE OF THE EXTERNAL CONNECTING LEADS. THE SYSTEMS ARE THUS ACTING AS RATHER POWERFUL OUTPUT SWITCHES OPERATING INTO A CAPACITANCE LOAD. THE PURPOSE OF THE PRESENT PAPER IS TO DERIVE A METHOD OF COMPUTING SUCH SWITCHES. CIRCUITS OF THE TWO SYSTEMS AD THE SYBSYSTEM ARE GIVEN AND ARE MATHEMATICALLY ANALYZED. THE AUTHOR FINDS THAT CONNECTING THE RECORDING AND COUNTING SYSTEMS INTO THE MEMORY SUBSYSTEM REDUCES THE COUNTING PROCESS TIME FROM MORE THAN TWO MICROSECONDS TO 0.5 MICROSECONDS.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CALCULATION OF THE PARAMETERS OF A MEMORY SUBSYSTEM USING ONE TYPE
OF M.O.S. TRANSISTOR -U-
AUTHOR--BASILADZE, S.G. **B**
COUNTRY OF INFO--USSR
SOURCE--IZV. VUZ RADIOELEKTRONIKA (USSR), VOL. 13, NO. 1, P. 3-11, JAN.
1970
DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--METAL OXIDE TRANSISTOR, MEMORY ELEMENT, CIRCUIT DESIGN

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/1718 STEP NO--UR/0452/70/013/001/0003/0011
CIRC ACCESSION NO--AP0136959
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136959

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFERENT METHODS ARE CONSIDERED OF DESIGNING MEMORY SUBSYSTEMS AS PART OF A LARGE INTEGRATED ASSEMBLY, USING M.O.S. TRANSISTORS. RELATIONS ARE ESTABLISHED BETWEEN THE COMPONENT PARAMETERS OF A MEMORY CELL, REQUIRED FOR STABLE OPERATION, AND BETWEEN THE NUMBER OF CELLS ON A SUBSTRATE VERSUS THE OPERATING READOUT SPEEDS. VARIOUS WAYS ARE DISCUSSED OF ORGANISING AND DISTRIBUTING THE CELLS ON A SUBSTRATE WITH A VIEW TO MINIMISING THE NUMBER OF LEADS FROM THE STORE.

UNCLASSIFIED

USSR

PRYANITSKIY, A. M., BASILENKO, Yu. A.

"Methods of Recognition of the Symmetrical Nature of Boolean Functions"

Priboy i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb.
[Automation Devices and Systems. Republic Interdepartmental Thematic
Scientific and Technical Collection], 1973, No 26, pp 124-127 (Trans-
lated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No
8 V414 by A. Muchnik)

Translation: An algorithm is presented for establishment of symmetry of
an arbitrary logical algebra function fixed by a sequence of 0 and 1 cor-
responding to values of the function in lexicographically ordered sets of
arguments. A clear logic tree method, convenient for machine realization,
is used. The number of necessary comparisons in this case is $2^{n-1}-1$, where
 n is the number of arguments, which is less than the number of comparisons
(operations) in other known methods for testing the symmetry of Boolean
functions.

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USSR

UDC 621.384.6

BASIN, I.A., BOBYKIN, B.V., DAVYDOVSKIY, V.YA., KEL'MAN, V.M., FINGGENOV, P.A., YAKUSHEV, YE. M. [In-t yadern. fiz. AN KazSSR--Institute Of Nuclear Physics, AS, Kazakh SSR]

"Magnetic Prism"

USSR Author's Certificate No 255429, filed 2 Mar 58, published 31 Mar 70 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A268P)

Translation: The magnetic prism which is patented, consisting of an electromagnetic with extended pole shoes of parallelepiped form, differs in the fact that with the object of reducing the inhomogeneity of a two-dimensional magnetic field and suppressing the dispersal of the fields, the prism contains another such electro-magnet located above the first, while the winding of both electromagnets is connected in opposition, and a gasket [prokladka] is mounted between the poles of the magnet and the yoke.

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USSR

UDC 669.15 539.67

LAPTEV, D. V., BERNSHTEYN, M. L., BASINA, N. Z., and ZAYMOVSKIY, V. A.,
Moscow Institute of Steel and Alloys

"The Change of the Amplitude Dependence of Internal Friction of Nickel
Steels After Thermomechanical Treatment"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 34, No 2, Aug 72, pp
408-410

Abstract: A study was made of the amplitude dependence of internal friction of 40N25, 60N20, and 80N18 steels after thermomechanical treatment. Wire specimens, 250 mm long and 0.9 mm in diameter, were subjected to thermomechanical treatment and hardening. The specimens were drawn at 550 and 950°C. Martensite was produced by deep cooling in liquid nitrogen; its quantity comprised 86-90%. The amplitude dependence of internal friction (ADIF), investigated at room temperature, is characterized by the tangent of the angle of slope α of a straight line in $\epsilon-Q^{-1}$ coordinates. The austenite ADIF shows an increase of $\tan \alpha$ with decreasing deformation temperature and increasing carbon content in the steel. The change of $\tan \alpha$ of martensite of 60N20 steel and the change of the level of its internal friction, depending on the tempering temperature, are discussed by reference to diagrams. Four figures, one table, four bibliographic references.

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AA0040777

BASIYEV IM_{UR} 0482

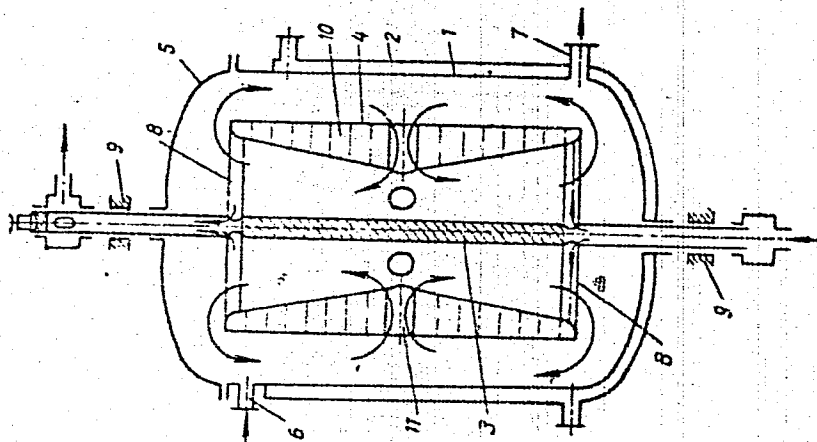
Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

240677 POLYMERISER for e.g. rubber manufacture giving intensive mixing of the liquid in which the hollow cylinder of the mixer is of X-shaped internal configuration. The reacting material is circulated through holes in the sides, and over the ends of the mixer. The greater height of the mixer, compared with its diameter, is advantageous in large-volume apparatus of this kind.

31.8.66. as 1099965/23-26, MAMEDOV, U.A. and BASIEV, I.M. (21.8.69) Bul. 13/1.4.69. Class 12g Int. Cl. B 01j.

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USSR

LISENKOV, A. N., BASIYEVA, T. Kh.

"Multifactor Plans for Evaluation of Order Effects and Their Application to Experimental Studies"

Voprosy Kibernetiki. Nekotoryye Voprosy Planirovaniya Eksperimenta [Problems of Cybernetics. Certain Problems of Experimental Planning], Moscow, 1972, pp 12-21 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V288, by the authors).

Translation: In the practice of experimental planning, multifactor plans are most common, in which all factors studied are tested simultaneously. However, situations exist in which it is either impossible or practically undesirable to test factors simultaneously. In these situations, the factors are tested in succession. If the output variable is independent of the order of application of the factors or, if there is only one possible order in which the sequence of factors can be applied, analysis of the experiment is performed as if the factors had been used simultaneously. If the factors can be used in various orders and the output quantity may vary when the order of application of the factors is changed, the experiment should be planned so as to evaluate the order effects. The use of this type of experiment is characteristic for studies of the reliability of instruments and structures, as

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USSR

Lisenkov, A. N., Basiyeva, T. Kh., Voprosy Kibernetiki. Nekotoryye Voprosy Planirovaniya Eksperimenta, Moscow, 1972, pp 12-21.

well as various types of testing problems in technological and medical-biological studies. This work presents a review of the basic methods of construction of plans for the performance of tasks of this type. Methods of construction of plans based on the realization of full and partial selection of sequences of application of factors are studied, as well as methods using ordinary 2_p -type plans.

2/2

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1/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--BURNING OF NATURAL GAS IN A FLUIDIZED BED FURNACE FOR CALCINING
ALUMINA -U-
AUTHOR--(02)-KRIGMAN, L.YE., BASKAKOV, A.P. **B**
COUNTRY OF INFO--USSR
SOURCE--GAZOV. PROM. 1970, 15(1), 29-31
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PROPULSION AND FUELS
TOPIC TAGS--NATURAL GAS, FLUIDIZED BED, INDUSTRIAL FURNACE, FUEL
CONSUMPTION, ALUMINA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1979/1911 STEP NO--UR/0492/70/015/001/0029/0031
CIRC ACCESSION NO--AP0048198
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0048198

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGE FROM INDIVIDUAL FLAME BURNERS TO FLUIDIZED BED COMBUSTION IS CONSIDERED WITH RESPECT TO THE BURNER SYSTEM AND AREA OF THE CALCINING CHAMBER. THREE CASES OF BURNER SYSTEMS WERE EXAMD.: (I) FEED OF PREMIXED GAS AIR INTO THE BURNER OR BED, (II) INDIVIDUAL FEEDING OF GAS THROUGH NOZZLES INTO THE CHAMBER PROPER, AND OF AIR INTO THE HEARTH, AND (III) FEED OF BOTH GAS AND AIR THROUGH THE HEARTH, MIXING OF BOTH IN THE BED ITSELF. CASE (III) WAS MOST ADVANTAGEOUS. THE OPTIMUM CALCINING TEMP. WAS FOUND TO BE 1000DEGREES AND THE RELATIVE FUEL CONSUMPTION WAS AT ITS LOWEST (111 KG-TON OF ALUMINA), COMPARED WITH 142-70 KG-TON IN INDIVIDUAL BURNERS.

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BASKAROV

A.P.

UR 0482

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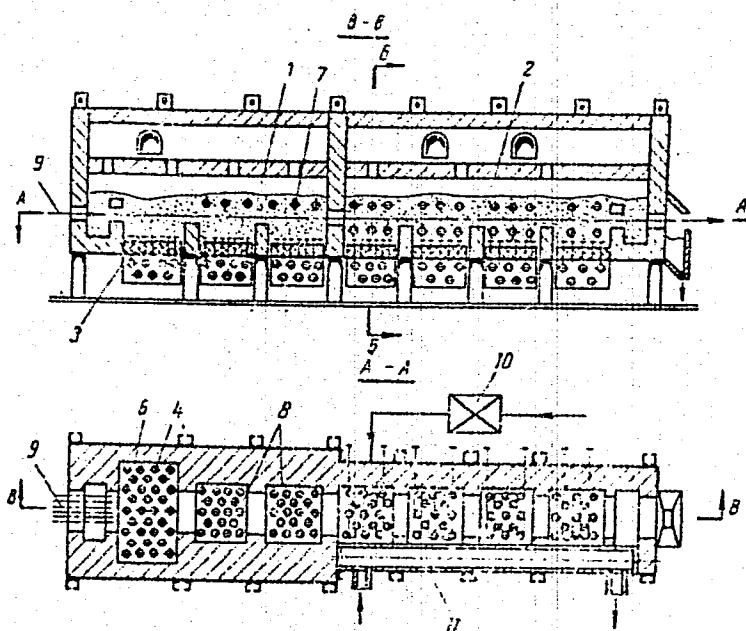
Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

240728 COMPARTMENT FURNACE intensifies the heat treatment operation in that each section of its gas distributor grid has independent headers to activate part of its lids or caps. The bottoms of the heating (1) and cooling (2) compartments comprise the grid sections (3) to support crushed corundum, firebrick etc, the first section grid (6) rather wider than those following so that the gas can burn well below the level of the wire passing through and provide enough heat to raise the metal to scale temperatures. The gas (short of air) burns and forms a de-oxidising medium, with additional air piped in (7) to finally burn off the gas above the wire level. When working small gauge wire, air preheated in the stove (10) is fed in through the grid caps. When working average gauge material, heat can be removed by the air cooling tube (11), whilst at heavy gauges a water-cooling tube can be inserted.

15.12.66 as 1120453/22-1.GUTOVSKII.B.P.et al(14.8.69)
Bul 13/1.4.69. Class 18c, 31a¹. Int.Cl.G21d, F27b.

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AA0040692



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AA0040692

AUTHORS: Gutovskiy, B. P.; Orlov, N. A.; Berdichevskiy, A. M.;
Baskakov, A. P.; Zubov, V. Ya.; Grachev, S. V.;
Berg, B. V.; Zavarov, A. S.; Burkov, G. G.;
Krasil'nikov, L. A.; and Sokolov, N. V.

19750312

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USSR

UDC: 621.375.4

BASKAKOV, I. V., VOROB'YEV, N. V., RYZHKOV, G. I.

"On the Problem of Matching a Photodiode and Semiconductor Amplifier to Maximize the Signal-to-Noise Ratio"

Tr. Mosk. vyssh. tekhn. uch-shcha im. N. E. Baumana (Works of the Moscow Higher Technical Academy imeni N. E. Bauman), 1972, No 150, pp 52-56 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D93 by G. S.)

Translation: Radiant energy receivers and transistorized amplifiers are used in many high-frequency receiver devices in automation. The problem of matching a radiant energy receiver and amplifier is fairly complicated in the case of the range of amplitudes of radiant fluxes which are fed to the radiant energy receiver, and reception of small useful signals against a background of appreciable constant flux. An expression for signal-to-noise ratio is derived on the basis of which optimum matching of the photodiode with the amplifier is possible. As an example, the authors propose realizations of the input stages of a reception device for a pulse signal in the optical band. Three illustrations, bibliography of two titles.

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USSR

DOC 001.701.769.1.007

LIKHOBAZENKO, I. Ya., KONDOV, I. T., BABILOV, A. M., and KISHCHENKO, R. A.

"Machine for Spot-Welding Large Parts With Curvilinear Profiling"

Kiev, Avtomaticheskaya Svarka, No 10, Dec 70, pp 67-68

Abstract: A description is given of a spot-welding machine developed by the Kalinin Polytechnical Institute in cooperation with the local branch of the All-Union Scientific Research Institute and the M. E. Bauman Moscow Higher Technical School. The tops of automobiles are given as examples of what is meant by curvilinear-profiled parts. Welding can be done on the machine without readjustments in going from one type of part to another. The machine has two small type GSK-40 double-electrode welding heads mounted on a radial girder and the rim of a ring capable of turning on its own axis. The machine has manual, automatic, and emergency drives, and other details of its operation, together with a diagram of the machine and its drive system, are given.

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1/2 018 UNCLASSIFIED PROCESSING DATE--11SEP70.
TITLE--EFFECT OF STRAY CAPACITANCE ON TRANSDUCER SENSITIVITY DURING A
MEASUREMENT OF THE CONTACT POTENTIAL DIFFERENCE BY THE DYNAMIC CAPACITOR
AUTHOR--KNOTS, L.L., BASKAKOV, V.A.
COUNTRY OF INFO--USSR *B*
SOURCE--ELEKTROKHIMIYA 1970, 6(1), 115-17
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--ELECTRIC CAPACITANCE, PIEZOELECTRIC TRANSDUCER, CAPACITOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0422 STEP NO--UR/0364/70/006/001/0115/0117
CIRC ACCESSION NO--AP0102433
UNCLASSIFIED

2/2 018
CIRC ACCESSION NO--AP0102433

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXAMPLE OF A MATH. SOLN. OF THE
PROBLEM IS GIVEN.

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UNIT ACCESSION

USSR

BASKAKOV, V. V., KALACHENKO, A. A., SPIRIDONOV, N. G.

"Algorithm and Program for One-Dimensional Trend with Estimation of Regression Line and Construction of Confidence Boundaries"

Mat. Metody v Geol. [Mathematical Methods in Geology -- Collection of Works], No 2, Alma-Ata, 1971, pp 137-152 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V703, by A. Doroshenko).

Translation: An algorithm is described and a program is presented for regression analysis of the results of measurement of a certain quantity Y as a one-dimensional function of X . Based on the set of N measurements by the method of least squares, a smoothing polynomial of power n is constructed. Statistical analysis determines the adequacy of representation of the function by the power n polynomial. To do this, the regularity of alternation of the rules of deviation of experimental values of the dependent variable of the corresponding calculation curve is studied. The basic criterion used to check the hypothesis of proper selection of the hypothetical curve is the difference between the calculated and tabular values of probabilities $P(u)$ that there will be u jumps in the random sequence of n_1 positive deviations and n_2 negative deviations. One supplementary criterion is the ratio of

USSR

Baskakov, V. V., Kalachenko, A. A., Spiridonov, N. G., Mat. Metody v Geol., No 2, Alma-Ata, 1971, pp 137-152.

dispersions of the corresponding quantities. A program written for the Ural-2 computer allows the arithmetic mean, sample dispersions, mean square deviations, variation factor and area between indicated pairs of regression curves to be calculated, and also allows estimation of the reliability of the results produced and calculation of confidence intervals. The program occupies 2134_8 locations of machine memory.

USSR

BASKAKOV, V. V., KURMANBAYEVA, F. M., GORELOV, G. Ya., KALACHENKO, A. A.

"Algorithm and Program for Statistical Analysis"

Mat. Metody v Geol. [Mathematical Methods in Geology -- Collection of Works], No 2, Alma-Ata, 1971, pp 161-176 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V701, by A. Doroshenko).

Translation: A program is suggested for statistical analysis of experimental data, the need for which arises in performance of various applied tasks, particularly in optimization of the process of enrichment of polymetallic ores. The program allows calculation of the following characteristics: mean value; dispersion of the mean; asymmetry and excess indicators; variation factor; mean square error of measurement of these quantities; paired correlation factor; partial and set correlation factors; estimates of reliability of correlation factors and significance of set correlation factor; linear regression equation and value of its coefficients. A program is presented in Ural-2 code, occupying a machine memory volume of 2180₈ locations. 2 biblio. refs.

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USSR

BASKAKOV, V. V., ZAKHVATOV, V. N., EBERLING, N. I.

"Algorithm and Program for Multidimensional Statistical Analysis"

Mat. Metody v Geol. [Mathematical Methods in Geology -- Collection of Works], No 2, Alma-Ata, 1971, pp 177-189 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V700, by A. Doroshenko).

Translation: An algorithm and program for multidimensional statistical analysis are described: determination of means and dispersions, comparison of means (in pairs) using the Student criterion, comparison of multidimensional means using the method of multidimensional dispersion analysis. The initial data (files of numbers) are represented in matrix form. The program can solve the problem if there are not over 10 components in the file and 1270 tests in the two files being compared. The program occupies 1663₈ locations of Ural-2 computer memory. 5 biblio. refs.

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USSR

UDC 621.372.326

MIROVITSKIY, D. I., DUBROVIN, V. F., and ~~BASKAKOV, V. V.~~

"Cophased Surface-Wave Directional Couplers Based on Dielectric Waveguides"

Moscow, Antenny, No 12, 1971, pp 65-76

Abstract: The article outlines results of work on devising and employing rectangular polystyrene waveguides as three-way and four-way surface wave line junctions in symmetrical and asymmetrical microwave configurations. These elements have certain advantages over metallic waveguides and strip lines in the less accessible submillimeter and infrared wavelengths, as well as in the centimeter and millimeter ranges, but there are special power transmission features which cannot be explained by the usual procedures for metallic components: An effective directional coupling of power from the main waveguide into the side waveguide occurs over a $\pm 20\%$ frequency range in a coupling region approximately a (dielectric) wavelength long, and the coupled wave is in phase with the wave propagated in the main waveguide. The reasons for this phenomenon are interpreted, experimentally corroborated, and graphically displayed in terms of the directional radiation of power from a localized inhomogeneity in the waveguide, the relation between the amplitude-phase characteristics of the branched signal as a function of the

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USSR

MIROVITSKIY, D. I., et al., Antenny, No 12, 1971, pp 65-76

angle at which the waveguides intersect, etc. After noting that their experimental data agrees well with later theoretical research for continuous transitions in open waveguides, the authors describe and plot properties of various cophased directional dielectric waveguide couplers and branching elements, including the losses in a three-way coupler in which power is transferred in a direction coinciding with the branch continuation, forming a fictitious branch, i.e., an area of free space. When two signals are simultaneously propagated from separate branches, their vector sum appears in the third branch and the coupler becomes an adder in which the various propagation, phase, and amplitude properties can be investigated. Moreover, if the applied signals are in phase, symmetrical and weakly directed radiation can undergo a directional phase shift at the waveguide intersection point. If special high-grade plastics and ceramics with 10-160 permittivity and lower losses are utilized, coupler dimensions, losses, and other properties can be substantially upgraded. A number of measuring instruments and testing units based on the above couplers have already been fabricated, and they show promise in several high-frequency applications, including use in multielement antenna feed devices.

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- 10 -

USSR

UDC: 621.372.832-181.4

MIROVITSKIY, D. I., DUBROVIN, V. F., BASKAKOV, V. V.

"Hybrid Ring Connections Based on Dielectric Waveguides"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 12, Dec 70, pp 2613-2615

Abstract: A hybrid cophased connector is proposed which is made in the form of a ring for purposes of miniaturization. The device is made of a rectangular dielectric waveguide with a cross section of 10 x 23 mm bent into a circle with a mean radius of 150 mm, the wider walls of the dielectric waveguide being perpendicular to the plane of the circle. The material is industrial polystyrene with a dielectric constant of 2.54 and a loss tangent of $4.3 \cdot 10^{-4}$. Laboratory tests of the connector showed that it operates satisfactorily in $\pm 20\%$ of the frequency band (mean frequency 10 GHz); inherent losses are no more than 4.7 DB, and the VSWR at the output is no worse than 1.28. The size of the device can be further reduced by using high-frequency dielectrics which have lower losses. In principle, there are no restrictions on operation of these connectors in the submillimeter and optical ranges.

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USSR

UDC 632.95

CHEKAREVA, T. G., VASSERMAN, A. M., VORONKOVA, V. V., UAKIMENKO, Ye. F., and BASKAKOV, Yu. A.

"Photochemical Decomposition of Meturin, Its Derivatives and Analogs"

V sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- collection of words), No 2, Moscow, 1972, pp 285-291 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N575 by G. A. Kosminskaya)

Translation: The photochemical decomposition of the herbicide meturin (I) and some of its derivatives and analogs following UV irradiation was studied. The and product of the photochemical decomposition of I is PhNHCONHMe (II). EPR-spectroscopy was used to show that the photochemical decomposition of I proceeds through the formation of the N-methylcarbamoyl-N-phenyl nitrate radical (III). Identical EPR spectra can be obtained by the oxidation of I by PbO₂. I and II are found by thin-layer chromatography among the decomposition products of III. There is a direct relationship between the sensitivity of the derivatives and analogs of I to UV light and their herbicidal activity.

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USSR

FADDEYEVA, M. I., BASKAKOV, YU. A., BOBYLEVA, S. S., ASTAF'YEVA, L. S.,

"Synthetic Method for Hydantoin Derivatives"

USSR Author's Certificate No 364611, filed 22 Jun 70, published 27 Feb 73
(from RZh-Khimiya, No 19, Oct 73, Abstract No 19N582P)

Translation: Hydantoin derivatives (I) of the series $RNCON(R')COCHR''$
(R, R', R'' = acryl or alkyl; X = S or O) are obtained by the reaction of
respective 6-Cl-I with the R''XH type compound in presence of HCl (gas)
acceptor. 2.59 g of 1,3'-ClC₆H₄-3-Me-5Cl-I dissolved in 50 ml alcohol is
refluxed for 7-8 hrs and evaporated yielding 2.62 g II (R = 3'-ClC₆H₄, R' =
Me, R'' = Et, X = O), m.p. 63-65° (petr. ether). Analogously II are obtained
(R, R', R'', X, yield in %, m.p. in °C being reported): Ph, Me, Me, O, 97.8,
58-60 (petr. ether); Ph, Me, Et, O, 96.8, 98-100 (petr. ether); Ph, Me,
m-ClC₆H₄, O, 82.1, 120-2 (alc); Ph, Me, o-ClC₆H₄, O, 80, 136 (benz. petr.
ether); Ph, Me, 2,4',6'-Cl₃C₆H₂, O, 75, 127-9; Ph, Me, iso-Pro, S, 119-120.

1/1

USSR

VORONTSOVA, N. A., VLASOV, O. N., FADEYEVA, M. L., BASKAKOV, YU. A.

"Alkaline Hydrolysis of O-Acyl-N-carboisopropoxy-N-arylhydroxylamines"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protective Agents -- collection of works), No 2, Moscow, 1972, pp 295-298 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19N552)

Translation: Alkaline hydrolysis of the derivatives of N-carboisopropoxy-N-acylhydroxylamine has been studied in temperature range +25 to -17°. The hydrolysis occurs by the second order reaction. The activation energies have been calculated. It has been shown that in addition to the inductive effect, other factors influence the reaction rate, principally the steric factors. O-Acyl-N-carboisopropoxy-N-acylhydroxylamines exhibit herbicidal properties.

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USSR

UDC 632.954

BASKAKOV, YU. A.

"Novel Herbicides"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. L. Mendeleev,
Vol 18, No 5, 1973, pp 495-507

Abstract: A review with 57 references covering the achievements of the last decade in synthesis of new herbicides in the series of simple and complex esters of phenols, carboxylic acids, acetanilide halides, dinitroanilines of sulfaminic and thiocarbonic acids, ureas, as well as of nitrogen heterocycles: derivatives of pyrrolidone, pyridine, pyridazinone, uracyl, imidazole, benzimidazole, quinanzolidine, oxadiazoline, triazines, derivatives of bisheterocyclic and organophosphoric compounds. Structure-activity relationships have been discussed, coupled with short reports of the synthetic methods and of the activities of individual herbicides.

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USSR

UDC 547.555+547.297

SVIRSKAYA, P. I., STRESBULAYEVA, A. I., NEGREBETSKIY, V. V.,
~~TIBANOV, P. V.~~, VASIL'YEV, A. F., and BASKAKOV, Yu. A., All-
Union Scientific Research Institute of Chemical Agents for Plant
Protection

"Hydroxylamine Derivatives With Herbicidal Activity. 42. Reactions
of Derivatives of N-Carbamoyl-N-arylhydroxylamines with Halides of
Haloalkylcarboxylic Acids"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 9, No 6, Jun 73,
pp 1163-1171

Abstract: N-Carbamoyl-N-arylhydroxylamine derivatives, on react-
ing with halides of alpha- and beta-halopropionic acids, formed
N-substituted O-alpha- or O-beta-halopropionyl derivatives of
carbamoyl-N-arylhydroxylamines. Under the action of bases, O-beta-
chloropropionylhydroxylamines were hydrolyzed to the initial
hydroxylamines. Depending on the conditions of the reaction and
the nature of the substituents, the N-substituted O-alpha-halopro-
pionyl derivatives of carbamoyl-N-arylhydroxylamines, on being
subjected to the action of bases, either split off hydrogen halide
with the formation of O-acryloyl derivatives or underwent cycliza-
tion with the formation of 2-aryl-4-(alkyl)aryl-5-methyl-1,2,4-
1/2

- USSR

SVIRSKAYA, P. I., et al., Zhurnal Organicheskoy Khimii, Vol 9,
No 6, Jun 73, pp 1163-1171

oxadiazine-3,6-diones. At high temperatures the O-alpha-halo-
propionyl and O-acryloyl derivatives readily underwent rearrange-
ment into the corresponding derivatives of o-aminophenol. In the
presence of triethylamine the O-alpha-halopropionyl-N-alkylcar-
bamoyl-o-aminophenols were converted as a result of recyclization
into N-alpha-halopropionyl-N-alkylcarbamoyl-o-aminophenols. The
compounds that have been synthesized and their physical proper-
ties are listed in tables.

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USSR

UDC

SVIRSKAYA, P. I., STREBULAYEVA, A. I., TIBANOV, P. V. and BASKAKOV, Yu. A.
All Union Scientific Research Institute of Chemicals for the Protection of Plants

"Hydroxylamine Derivatives with Herbicidal Properties. XII. Halogenation
Reactions of N-Carbamoylhydroxylamine Derivatives

Zhurnal Organicheskoy Khimii, Vol. VIII, No. 6, June 1972, pp 1217-1224

Abstract: Bromination of N-alkyl(aryl)carbamoyl-N-aryl(alkyl)-hydroxylamines with molecular bromine in aprotic inert solvent media produced corresponding n-bromo substituted derivatives. In the case of N-arylcarbamoyl-N-aryl-hydroxylamines the bromine atom attacks, first of all, the ring adjoining the hydroxylamine group. Only in the case of N-alkylhydroxylamines and para substituted N-aryl-hydroxylamines bromination of aryl radical of the carbamoyl group occurs. The structure of bromination products was proven by reverse reaction synthesis and synthesis of derivatives. The IR spectra contain OH and NH bonds which correspond to the appropriately located NOH, NH and CO groups. Bromination of N-allylcarbamoyl-N-arylhydroxylamines involves initially the addition of Br₂ to the double bond and subsequent halogenation of the ring. At 20 - 30° C the reaction is more complex due to simultaneous rearrangement involving the migration of hydroxyl group from the nitrogen to the ring. At lower temperatures the rate of bromination reaction is too low. Bromination of N-allylcarbamoyl-N-arylhydroxylamines produces N-2,3-dibromopropylcarbamoyl-N-arylhydroxylamines and

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USSR.

Svirskaya, P. I., et al, Zhurnal Organicheskoy Khimii, Vol. VIII, No. 6, June 1972, pp 1212 - 1224

the products of their rearrangement -- N-2,3-dibromopropylcarbamoyl-O-aminophenols. In concentrated hydrochloric acid or in acetone solution saturated with HCl gas N-allylcarbamoyl-N-arylhydroxylamines form N-allyl-N¹-n- or -O-chloroarylurea. Reaction with hydrogen bromide results in the formation of the reduction products: N-allyl-N¹-arylurea.

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USSR

UDC 632.95

BASKAKOV, YH. A., BAKUMENKO, L. A., MEL'NIKOV, N. N., SVIRSKAYA, P. I.,
STONOV, L. D., SIMONOV, V. D., SHVINDLERMAN, G. S., SHCHERBATYKH, YU. I.

"Meturin -- a New Herbicide for Cotton and Potatoes"

V sb. Khim. sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp. 1, Moscow, 1970, pp 179-187 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N446)

Translation: A new herbicide -- meturin (I) (N-phenyl-N'-hydroxy-N'-methylurea) -- was synthesized. The compound can be produced with a high yield by reacting phenylhydroxylamine with MeNCO. Treatment of vegetating plants with I is not highly effective. The best results are obtained when the herbicide is introduced into the soil before planting. As a rule, dicotyledons are more effectively suppressed by I than monocotyledons. Highly sensitive to I (70-100% inhibition of growth from a dose of 0.5 kg/hectare) are corn mayweed, sheep sorrel, wild beets, pigweed, wild rice, buckwheat, soybeans, tomatoes, cabbage, cucumbers, radishes, clover and alfalfa. Sensitive to I (70-100% death from a dose of 1.5 kg/hectare) are field pennycress, field wintercress, barley grass, beans, vetch, carrots, beets and flax. Moderately sensitive (complete control with a dose of 3 kg/hectare) are oats, wheat, corn

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USSR

BASKAKOV, YU. A., et al., V sb. Khim. sredstva zashchity rast., vyp 1, Moscow, 1970, pp 179-187

beans, seed onions, and sunflowers. Rough snakedweed is among the weeds resistant to I, while potatoes and cotton are resistant crops. The compound retains high activity throughout the entire vegetative period in the upper layer of soil (0-5 cm). The activity of the herbicide begins to decline within 2 months after introduction in the lower and middle layers of soil. In doses of 3-4.5 kg/hectare, I destroyed 70-90% of the annual weeds in cotton fields, but in some instances caused temporary chlorosis in a dose of 4.5 kg/hectare. In potato fields, the compound in doses from 2 to 3 kg/hectare destroyed annual weeds throughout the entire season, which meant that potatoes could be grown without hilling. The compound has low toxicity for human beings. It is authorized in the Soviet Union for experimental production use on potatoes.

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USSR

UDC 632.95

VORONKOVA, V. V., CHEKAREVA, T. G., and BASKAKOV, YU. A.

"Thin Layer Chromatography of N-Carbamoyl-N-aryl(alkyl)hydroxylamines and Their O-Acyl Derivatives"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 187-191 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N536 by T. G. Chekareva)

Translation: A study was made of the chromatographic behavior of 20 N-carbamoyl derivatives of aryl(alkyl)-hydroxylamine of the general formula $RR'NC(O)NR''R'''$ (I) $\left[R=H, OH, OMe, OC(O)NH_2, OC(O)NHMe; R'=Me, aryl; R''=H, Me, R'''=H, C_1 - C_4\text{-alkyl}, Ph \right]$ on plates with silica gel KSK $\left[\text{expansion unknown} \right]$ (5-80 microns). R_f values are given for I in seven systems of solvents. Iodine vapors, an 0.05-percent solution of bromophenol blue in a 1% solution of $AgNO_3$, an acid solution of $KMnO_4$ are used for detection of I on the chromatograms. TLC sensitivity: 0.1-2 mcg. Silica gel with acetic or citric acid is used to separate substances of the general formula $PhN \left[CC(O)X \right] C(O)NHMe$, where $X=C_1 - C_4\text{-alkyl}$. Values are given for R_f in seven systems of solvents. Detection sensitivity 1-5 mcg.

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USSR

UDC 630:54:541.571.9:547.871

TIBANOV, P. V., VASIL'YEV, A. F., BASKAKOV, Yu. A., LEVINSKIY, B. N., and MEL'NIKOVA I. A., All-Union Scientific-Research Institute of Chemical Agents for Plant Protection

"Herbicidal Derivatives of Hydroxylamine. XL. Energy of the Intramolecular Hydrogen Bond, and the Structure of Associates of O-Methylhydroxylamine Derivatives of sym-Triazines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 1972, pp 124-127

Abstract: Experimental data have already suggested that simplification of methods and calculations for finding both the energy of the intramolecular bond, and the dimer-monomer entropy difference, will not substantially affect the accuracy of the results. Using the temperature relationship of the equilibrium constants, as determined by the ebullioscopic and cryoscopic methods, the authors determined both of the constants in question for seven compounds of the symtriazine group. Also obtained were the infrared spectrum for a solution of 2-chlor-4-di-propylamino-6-methoxyamino-sym-triazine in hexachlorobutadiene, and the relationship between (1) the association factor ($f = \bar{M}/M$, where \bar{M} is the measured molecular weight, and M is the molecular weight of the monomer, and (2) the molar concentration. Figures for the 1/2

USSR

TIBANOV, P. V., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 1,
Jan 1972, pp 124-127

intramolecular H bond energy and the dimer-monomer entropy difference turned out to be very close to those obtained by the accurate method of "peak" band intensities. The various data obtained are summarized in tables and graphs.

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USSR

BASKAKOV, Yu. A., VOLOVNIK, L. L., VASIL'EV, A. F., ARYUTKINA, N. L.,
TIBANOV, P. V., and NEGREBETSKIY, V. V.

"Herbicidal Derivatives of Hydroxylamine. XXIV. The Reaction of Halides
of Haloacetic Acids with Hydroxylamine Derivatives of Thiourea"

Khimiya Geterotsikl. Soyedin. [Chemistry of the Heterocyclic Compounds --
Collection of Works], No 3, Riga, Zinatne Press, 1971, pp 104-107. (Trans-
lated from Referativnyy Zhurnal Khimiya, No 5, Moscow, 1972, Abstract No
5N676 by the authors)

Translation: The reaction of ClCH_2COCl with N-methylthiocarbamoyl-O-methyl-
hydroxylamine (I) without any HCl acceptor produces 2-methoxyimino-3-methyl-
4-oxo-1, 3-thiazolidinium (II), which is converted by heating in MeOH to 2-
methoxyimino-3-methyl-1, 3-thiazolidin-4-one (III). Two point two (2.2) g
 ClCH_2COCl is added to a solution of 2.4 g I in 100 ml ether at -20° , mixed
for 2 hours (after which the temperature of the mixture is about 20°) and
3.6 g II are separated, yield 94 %, mp 160° (in a sealed capillary). A
solution of II in MeOH is heated 1-2 hr on a water bath, the MeOH is dis-
tilled under vacuum, producing III, yield about 100 %, mp 88° . For a
previous report see RZHKHim, 1969, 4B1038.

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USSR

UDC 632.95

VORONKOVA, V. V., ~~BASKAKOV, YU. A.~~, CHEKAREVA, T. G., SVIRSKAYA, P. I.

"A Method of Making Derivatives of N-Carbamoyl-o-phenylene-diamine"

USSR Author's Certificate No 292965, filed 24 Sep 69, published 5 May 71
(from RZh-Khimiya, No 1(II), Jan 72, Abstract No 1N378)

Translation; Physiologically active derivatives of o-phenylene diamine of the general formula $X_nC_6H_{4-n}NHR-2-NHCONR'R''-1$ (I) ($R = \text{alkyl}$, $R', R'' = H$, alkyl , $X = Cl, Br, Me, MeO, NO_2$, $n = 1-2$) are obtained by heating an aqueous suspension of O,N-biscarbamoylated arylhydroxylamines at $35-100^\circ C$. A solution of 0.496 g of O,N-bis-(methylcarbamoil)-phenyl-hydroxylamine in 10 ml of water is heated at $40-45^\circ C$ until CO_2 is no longer evolved, and the mixture is extracted with EtOAc (15 ml x 5) yielding 0.39 g of I from the organic layer ($R = R' = Me$, $R'' = X_n = H$). The yield is 97% mp $136^\circ C$. The compounds (I) ($R = Me$, $X_n = H$) are similarly obtained (given are $R' = R''$, yield in %, mp in $^\circ C$): Me, 99, 184; H, 86,). I. A. Mel'nikova.

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USSR

UDC 547.238+547.435.2+632.954

VSEVOLOZHSKAYA, N. B., SVIRSKAYA, P. I., and BASKAKOV, Yu. A., All Union Scientific Research Institute of Chemical Plant Protection Agents

"Herbicides Derivatives of Hydroxylamine. XXXIX. N-Carbamoyl-N-Arylhydroxylamines and Their Reactions"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 5, May 71, pp 923-929

Abstract: N-carbamoyl-N-arylhydroxylamines (I) were synthesized by reacting N-arylhydroxylamines with potassium cyanate in aqueous ether solution and in presence of an equivalent quantity of hydrochloric acid. (I) Could also be obtained in anhydrous medium using gaseous isocyanic acid produced by pyrolysis of cyanuric acid. (I) Could be easily O-carbamoylated by alkyl or arylisocyanates in anhydrous acetone in presence of catalytic amounts of triethylamine; this reaction was not observed in aqueous medium. The hydroxyl group of (I) reacts with aryl chlorides and anhydrides, with esters of chlorocarboxylic acids and with chloroacetylchlorides. All of the O-derivatives of carbamoylhydroxylamines, with exception of the 3-4-dichloro- and 3-nitrophenylhydroxylamine derivatives, when treated with HCl yield N-arylsureas with a chlorine substituent in the nucleus. O-carbalkoxy-N-carbamoyl-N-arylhydroxylamines are used in synthesis of N(4) unsubstituted 2-aryl-1,2,4-oxadiazolidinediones-3,5.

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USSR

UDC 632.95

GORSKAYA, T. V., SHVINDLERMAN, G. S., and BASKAKOV, YU. A.

"A Method for Preparing Esters of N-Carboaryloxy-o-hydroxylamino-benzoic Acid"

USSR Author's Certificate No 248696, filed 18 Mar 68, published 26 Feb 70 (From RZh-Khimiya, No 22, 25 Nov 70, Abstract No 22 N712 P by N. K. Poznanskaya)

Translation: Compounds with the general formula $o\text{-ROOCC}_6\text{H}_4\text{N(OH)COOC}_6\text{H}_4\text{X}_n$ (I; R - lower alkyl; X - halide, alkyl, NO_2 ; $n=0-2$) are obtained from the reaction of $o\text{-ROOCC}_6\text{H}_4\text{NHOH}$ (II) with arylchloro-carbonate ester in the presence of a stoichiometric amount of NaHCO_3 in an anhydrous organic solvent at 5 to 25° . 0.84 g of anhydrous NaHCO_3 is added to a solution of 0.01 mole of II in 25 ml of Et_2O . Then 0.01 mole of arylchlorocarbonate is gradually added to the mixture as it is stirred and kept for 2 hours at about 20° . The precipitate is separated and the filtrate evaporated, producing an oily residue that crystallizes after being washed with petroleum ether. The following I (R, X_n , yield in %, melting point in $^\circ\text{C}$ are given) are obtained: Et, 2,4- Cl_2 , 89, 109 (petroleum ether); Et, -, 96.5, 1/2

USSR

GORSKAYA, T. V., et al., USSR Author's Certificate No 248696, filed 18 May 68, published 26 Feb 70

55-7; Et, n-Me, 100, 77-9; Et, n-NO₂, 95.5, 90 - 1; Et, n-Cl, 93.6, 74-5. I posses physiological activity.

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USSR

UDC 632.95

MEL'NIKOV, I. A., MEL'NIKOV, N. N., and BASKAKOV, YU. A.

"A Method of Preparing 2-Benzoyloxy-4-N-alkylhydroxyl-amino-6-alkylamino-
triazines"

USSR Authors' Certificate No 250148, filed 3 Nov 67, published 23 Jan 70
(from Referativnyy Zhurnal Khimiya, No 17 10 Sept 70, Abstract No 17 N655 :)

Translation: Physiologically active 2-CCH₂Ph-4-N(R)(R')-6-NHNR'-syn-triazines (I) (R = C₁ - C₃-alkyl; R' = C₁ - C₅-alkyl) are prepared by condensing 2-Cl-4-PhCH₂O-6-NH-syn-triazines (II) with an excess of N-alkylhydroxylamine. For example 5,2 chlorine hydrate. MeNHCH is 5 ml water at a temperature from -10 to -5°C is neutralized in a stream of H₂ by a solution of 5.2 gm NaHCO₃ in 10 ml water. A solution of 8.7 gm of compound II (R' = iso-Pr, melting point 64-5°C) in 20 ml dioxane, and 5.2 gm NaHCO₃ in 30 ml water are added simultaneously to the mixture for 7-10 min at 5-10°C. The pH of the mixture is approximately 8 after the addition. The mixture is agitated for 2 hr at 55-60°C and for 1 hr 60°C in a stream of H₂. The mixture is cooled, supplemented by water to the extent of 1/2 its volume, acidified to pH 7 by HCl (acid) or AcOH, saturated with NaCl subjected to ethyl ether extraction (3 x 35 ml), the organic layer is dried with MgSO₄ and evaporated, 2 gm of the viscous residue is dissolved in 8 ml of warm EtOH and cooled to 20°C, 20 ml of water is added 1/2

USSR

MEL'NIKOVA, I. A., et al., USSR Authors' Certificate No 250142

followed by a 10% solution of NaOH in water until the residue dissolves, the solution is acidified with AcOH to pH 7, the residue is filtered, washed with water, dried on P_2O_5 , NaOH, with isolation of 1 gm of compound I ($R = Me$, $R' = iso-Pr$), yield 50%, melting point 57-59°C. By an analogous procedure compound I ($R = Et$, $R' = iso-Pr$) is prepared with a yield of 70% and a melting point of 120-121°C.

I. A. Mel'nikova.

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ACC. NR:

APC100918

Abstracting Service:

CHEMICAL ABST.

5-B

Ref. Code:

4X036L

110743p Herbicide derivatives of hydroxylamine. XXXV. Reaction of N-alkylcarbamoyl-N-alkylhydroxylamines with isocyanates. Konstantinova, I. V.; Shvindlerman, G. S.; Vasil'ev, A. F.; Baskakov, Yu. A. (Vses. Nauch.-Issled. Inst. Khim. Serdstv Zashch. Rast., Moscow, USSR). *Zh. Org. Khim.* 1970, 6(2), 300-6 (Russ). Condensation of RNHOH with R¹NCO in Et₂O or benzene at 0-5° gave RN(OH)CONHR¹ (I) (R and R¹ given): Me, Me; Me, Et; Me, iso-Pr; Me, Bu; Me, iso-Bu; Me, sec-Bu; Me, tert-Bu; Et, Me; Et, Et; Et, Pr; Et, iso-Pr; Et, Bu; Et, iso-Bu; Et, sec-Bu; Et, tert-Bu; Et, 3-ClC₆H₄; and iso-Pr, tert-Bu. At 20° RNHOH react with R¹NCO to give besides I also RN(O₂CNHR¹)CONHR² (R, R¹, and R² given): Me, Me, Me; Et, Me, Me; Et, iso-Pr, iso-Pr; Me, iso-Pr, iso-Pr; Et, sec-Bu, sec-Bu; Et, tert-Bu, 3-ClC₆H₄; and Et, 3-ClC₆H₄, 3-ClC₆H₄. The "transisocyanation" reaction (N. V. Konstantinova *et al.*, 1969) of I with isocyanates gives a variety of products depending on the reaction conditions and the relative reactivity of the reactants: e.g. EtN(OH)CONHBu-tert + 3-ClC₆H₄NCO → EtN(OH)CONHC₆H₄Cl-3 → EtN(O₂CNHBu-tert)CONHC₆H₄Cl-3. Also MeN(OH)CONHBu + MeNOC → MeN(O₂CHNMe)CONHMe + BuNCO.

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USSR

UDC 547.435.2+632.954

B
BASKAKOV, YU. A., FADDEYEVA, V. K., ZHURAVSKAYA, T. S., and SVIRSKAYA, P. I., All Union Scientific Research Institute for Chemical Means of Plant Protection, Moscow, State Committee for Chemistry USSR

"Herbicidal Derivatives of Hydroxylamines

XXX. O-Substituted N-halophenoxyacyl-N-alkyl(aryl)hydroxylamines"

Moscow, Zhurnal Organicheskoy Khimii, Vol 6, No 2, Feb 70, pp 281-285

Abstract: O-Acylhydroxylamines were obtained by reacting hydroxylamines with anhydrides of alkylcarboxylic acids in presence of acid catalysts (phosphoric acid or a mixture of phosphoric acid and carboxylic acid anhydrides). The N-methylhydroxylamines react under slightly more drastic reaction conditions than corresponding N-phenyl derivatives. Reaction rate drops with higher molecular weight of the anhydride. O-Carboethoxy-N-haloaryloxyacyl-N-phenyl(methyl)hydroxylamines could be obtained from the reaction of ethylchlorocarbonate and hydroxylamine in an inert solvent at 0 to 20° and in presence of organic bases (pyridine, triethylamine). At room temperature hydroxylamines react with isocyanates to yield O-carbamoyl-N-haloaryloxyacyl-
1/2

USSR

BASKAKOV, YU. A., et al, Zhurnal Organicheskoy Khimii, Vol 6, No 2, Feb 70, pp 281-285

N-phenyl(methyl)hydroxylamines. Most of the compounds proved to be quite stable.

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- 108 -

USSR

UDC 547.555

B

FADDEYEVA, V. K., SVIRSKAYA, P. I., and BASKAKOV, YU. A., All Union Scientific Research Institute for Chemical Means of Plant Protection, Moscow, State Committee for Chemistry USSR

"Herbicidal Derivatives of Hydroxylamine
XXXI. Synthesis and Reactions of O,N-Diacylsubstituted N-Arylhydroxylamines"

Moscow, Zhurnal Organicheskoy Khimii, Vol 6, No 2, Feb 70, pp 285-291

Abstract: The authors found that the acylation of N-carboalkyl-N-aryl-hydroxylamines with halophenoxyacyl chlorides is possible when the reaction is carried out in an anhydrous organic solvent -- methylene chloride. The reaction is then accompanied by evolution of gaseous hydrogen chloride. In some cases this reaction becomes hindered by a cross-acetylation reaction; for example with 2,4,5-trichlorophenoxyacetylchloride this becomes even the primary reaction. It goes very well at -20 to -10° in an anhydrous medium. In some cases this cross-acetylation occurs on recrystallization or even on taking the melting point. This reaction is also possible with phenyl-

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USSR

FADDEYEVA, V. K., et al, Zhurnal Organicheskoy Khimii, Vol 6, No 2, Feb 70, pp 285-291

sulfonyl chlorides. The O-halophenoxyacyl-N-carboalkyl-N-arylhydroxylamines are highly active herbicides comparable to or better than halophenoxy-carboxylic acids.

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USSR

B UDC 547.435.2 + 547.238 + 632.954

SVIRSKAYA, P. I., BASKAKOV, YU. A., VASIL'YEV, A. F., TIBANOV, P. V.,
and STREBULAYEVA, A. I., All-Union Scientific Research Institute for
Chemical Means of Plant Protection, Moscow, State Committee for
Chemistry USSR

"Herbicidal Derivatives of Hydroxylamines

XXXII. Synthesis and Reactions of N-arylcabamoyl-N-arylhydroxyl-
amines"

Moscow, Zhurnal Organicheskoy Khimii, Vol 6, No 2, Feb 70, pp 292-300

Abstract: The authors synthesized a series of variously substituted N-arylcabamoyl-N-arylhydroxylamines and their acetates by reacting arylhydroxylamines with arylisocyanates in anhydrous organic solvents. The products were checked for herbicidal activity but were practically inactive. Some exhibited fungicidal activity of the systemic type. The acetates proved to be more stable compounds with high melting points. Studies of IR spectra have shown that in solution these hydroxylamines prefer a trans form; when the concentration is increased the cis form begins to show up. The acetates showed spectra which led to the conclusion that they may have cis-trans conformations not only of the CONH group, but also of aryl and acyl groups.

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UDC 547.238+632.954

SVIRSKAYA, P. I., BASKAKOV, YU. A., SHVINDLERMAN, G. S., KUSKOVA, N. B., VASIL'YEV, A. F., and TIBANOV, P. V., All-Union Scientific Research Institute for Chemical Means of Plant Protection, Moscow, State Committee for Chemistry USSR

"Herbicidal Derivatives of Hydroxylamine

XXIX. N-Arylcarbamoyl-N-alkylhydroxylamine and Their Derivatives"

Moscow, Zhurnal Organicheskoy Khimii, Vol 6, No 2, Feb 70, pp 274-280

Abstract: The N-arylcarbamoyl-N-alkylhydroxylamines were obtained by reacting arylisocyanates with N-alkylhydroxylamines or their chlorohydrates in inert organic solvents such as benzene, toluene, ethyl acetate, in which the reaction is quite energetic. The products formed are insoluble in these solvents, giving almost quantitative yields of quite pure materials. The reaction of arylisocyanates with alkylhydroxylamines hydrochlorides could be carried out in aqueous ether or aqueous ethyl acetate. Acetates were prepared by known methods but proved to be unstable in presence of acids and bases. Some of the O-acyl-N-arylcarbamoyl-N-methylhydroxylamines exhibited high and quite selective herbicidal activity.

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1/2 018

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--HERBICIDE DERIVATIVES OF HYDROXYLAMINES. XXXII. SYNTHESIS AND
REACTIONS OF N,ARYLCARBAHOYL,N,ARYLHYDROXYLAMINES -U-
AUTHOR--(05)-SVIRSKAYA, P.I., BASKAKOV, YU.A., VASILYEV, A.F., TIBANOV,
P.V., STREBULAYEVA, A.I.
COUNTRY OF INFO--USSR

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SOURCE--ZHURNAL ORGANICHESKOY KHIMII, 1970, VOL 6, NR 2, PP 292-300

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERBICIDE, HYDROXYLAMINE, CHEMICAL SYNTHESIS, INSECTICIDE,
FUNGICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1201

STEP NO--UR/0366/70/006/002/0292/0300

CIRC ACCESSION NO--AP0130215

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130215

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPOUNDS CONTAINING VARIOUS SUBSTITUENTS IN BOTH AROMATIC RINGS WERE PREPARED BY THE REACTION OF ARYLHYDROXYLAMINES WITH ARYL ISOCYANATES $X \text{ SUBN C SUB6 H SUB5MINUSN NHOH PLUS Y SUBM C SUB6 H SUB5MINUSN NCO YIELDS X SUBN C SUB6 H SUB5MINUSN H(OH)CONHC SUB6 H SUB5MINUSN Y SUBM}$. COMPOUNDS I WHERE X EQUALS 4,CH SUB3 ARE THE LEAST STABLE AND DECOMPOSE ON SLIGHT HEATING, OR EVEN ON RECRYSTALLIZATION FROM METHYLENE CHLORIDE. THE FREE HYDROXYL GROUP IN COMPOUNDS I CAN BE READILY ACYLATED WITH ACID ANHYDRIDES AND ACYL CHLORIDES TO FORM COMPOUNDS II $X \text{ SUB N C SUB6 H SUB5MINUSN N9OCOR)CONIC SUB6 II SUB5MINUSN Y SUBM}$. COMPOUNDS I AND II ARE PRACTICALLY INACTIVE AS INSECTICIDES, BUT SOME OF THEM ARE SYSTEMIC FUNGICIDES. FACILITY: VSESOUZNY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT KHIMICHESKIKH SREDSTV ZASHCHITY RASTENIY.

UNCLASSIFIED

1/2 008
UNCLASSIFIED
TITLE—USE OF O HYDROXYLAMINO BENZOIC ACID FOR PREPARING HETEROCYCLES -U-
AUTHOR—(02)—SHVINDLERMAN, G.S., BASKAKOV, YU.A.
COUNTRY OF INFO—USSR
SOURCE—KHIM. GETEROTSIKL. SOEDIN. 1970, (3), 427
DATE PUBLISHED—70
SUBJECT AREAS—CHEMISTRY
TOPIC TAGS—HYDROXYLAMINE, BENZOIC ACID, HETEROCYCLIC NITROGEN COMPOUND,
HETEROCYCLIC OXYGEN COMPOUND, ORGANIC SYNTHESIS
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—2000/0855
CIRC ACCESSION NO—AP0124518
STEP NO—UR/0409/70/000/003/0427/0427
UNCLASSIFIED

2/2 008

CIRC ACCESSION NO—AP0124518

UNCLASSIFIED

PROCESSING DATE—30OCT70

ABSTRACT/EXTRACT—(U) GP-0— ABSTRACT. O RNHCON(OH)C SUB6 H SUB4 CO SUB2
H (I) WITH 5-25PERCENT AP. BASE GAVE 90-5PERCENT THE FOLLOWING II (R AND
M.P. GIVEN): PH, 183.5-4.5DEGREES; M CLC SUB6 H SUB4, 220DEGREES; 3,4
CL SUB2 C SUB6 H SUB3, 260DEGREES; ANF FURFURYL, 220-1DEGREES; AND IN
60-75PERCENT YIELD THE FOLLOWING II (R AND M.P. GIVEN): ME,
231-2DEGREES; ET, 175.5-6.5; AND CH SUB2:CHCH SUB2, 148-9DEGREES. I IN
ETOH HEATED 1-2 HR AT 40-60DEGREES WITH ET SUB3 N OR CAUSTIC SODA GIVE
THE FOLLOWING III (R AND M.P. GIVEN): ME, 137-8DEGREES; ALLYL,
98.5-101DEGREES; PH, 148-51DEGREES; AND TERT BU. 97-8DEGREES.
FACILITY: YSES. NAUCH. ISSLED. INST. KHIM. SREDSTV ZASHCH. RAST.,
MOSCOW, USSR.

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0138260

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHASE DIAGRAM FOR BI-PB, WHICH CAN BE CONSIDERED AS THE RESULT OF THE SUPERPOSITION OF THE "SIMPLEST" PHASE DIAGRAMS (6 IN THIS CASE), CAN BE CALCD. BY USING THE MODEL OF REGULAR SOLNS. (D. KAMENETSKII, 1964) TO CALC. EACH OF THE SIMPLE PHASE DIAGRAMS. THE APPEARANCE OF A NEW REGION OF STABILITY WAS FOUND FOR THE GAMMA PHASE IN THE 0.7-0.9 ATOM FRACTION OF BI BEGINNING WITH A PRESSURE OF SIMILAR TO 10 KILOBARS. FACILITY: INST. FIZ. TVERD. TELA, MOSCOW, USSR.

UNCLASSIFIED

1/3 . 050 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EXCITATION OF STIMULATED RAMAN SPECTRA IN LIQUIDS DURING THE
MODULATION OF LASER QUALITY BY THE SUBSTANCE BEING STUDIED -U-
AUTHOR-(04)-KOROLEV, F.A., BASKAKOVA, Z.A., ZAKHAROVA, T.S., ODINTSOV,
V.I.
COUNTRY OF INFO--USSR
SOURCE--PISMA ZH. EKSP. TEOR. FIZ. 1970, 11(6), 295-7
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RAMAN SPECTRUM, LIGHT SCATTERING, LASER MODULATION, RUBY
LASER, BENZENE, CARBON TETRACHLORIDE, CYCLOHEXANE, LASER PULSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--2000/1170

STEP NO--UR/0396/70/011/006/0295/0297

CIRC ACCESSION NO--AP0124825

UNCLASSIFIED

2/3 050

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124825

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. ON THE BASIS OF REVERSE STIMULATED MANDELSTAM BRILLOUIN (MB) LIGHT SCATTERING, WHICH LEADS TO REFLECTION OF A CONSIDERABLE PART OF THE INCIDENT LIGHT OUTSIDE OF THE LASER, MODULATION OF LASER QUALITY WAS ACHIEVED. WITH AN EXPTL. EQUIPMENT COMPOSED OF A MIRROR, RUBY CRYSTAL (120 MM), FOCUSING LENSE, CELL 940 CM), AND SPECTROGRAPH, THE EFFECT OF BENZENE (I), CYCLOHEXANE (II), AND CCL SUB4 (III) WAS STUDIED. ENERGY OF A SINGLE PULSE INCIDENT ON THE SUBSTANCE WAS SIMILAR TO 1.5 J. FOR I AND II, SIMILAR TO 1.2 FOR III. HALF WIDTH OF THE PULSE DURATION WAS SIMILAR TO 25 NSEC FOR I AND II, SIMILAR TO 20 FOR III. SPECTRAL STUDIES SHOWED THE PRESENCE OF 4-5 COMPONENTS OF MB LIGHT SCATTERING, LINewidth OF SINGLE COMPONENT WAS SIMILAR TO 10 PRIME NEGATIVE2 CM PRIME NEGATIVE1 (WHICH IS CONSIDERABLY LOWER IN COMPARISON WITH THE LINewidth IN THE REGIME OF FREE GENERATION, 0.35 CM PRIME NEGATIVE1). IN I 4 STOKES EMISSION COMPONENTS WITH A SHIFT OF 992 CM PRIME NEGATIVE1 WERE EXCITED (THE POWER OF THE 2ND WAS HIGHER THAN 15 MW.). IN II 2 STOKES COMPONENTS WERE EXCITED CORRESPONDING TO THE MOL. VIBRATION 2852 CM PRIME NEGATIVE1 (THE MOST INTENSE COMPONENT IS SIMILAR TO 20 MW.), 2 COMPONENTS OF THE VIBRATION 801 CM PRIME NEGATIVE1, AND 2 COMBINATION STOKES FREQUENCIES WITH SHIFT (2852 PLUS 801) AND (2 TIMES 2852 PLUS 802) CM PRIME NEGATIVE1. IN III 4 STOKES COMPONENTS WITH SHIFT 459 CM PRIME NEGATIVE1 WERE EXCITED (THE 2ND WITH SIMILAR TO 10 MW.). HIGHER POWER OF THE EXCITING PULSE AND MORE EFFECTIVE EXCITATION OF THE RAMAN SPECTRA WERE FOUND THAN WITH EQUIPMENT USING A SATURABLE ABSORBER FOR THE MODULATION OF LASER QUALITY.

UNCLASSIFIED

3/3 050
CIRC ACCESSION NO--AP0124825

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW,
USSR.

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USSR

UDC: 51:330.115

BASKAS, A. S.

"Decomposition Determination of the Priorities of Operations of a Net"

Tr. AN LitSSR (Works of the Academy of Sciences of the Lithuanian SSR), 1970, B, No 4(63), pp 257-264 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V661)

Translation: A decomposition method is proposed and an algorithm is worked out for determining the priorities (time reserves) of operations of a net for planning of large projects with limited resources by heuristic methods. The material presented can be used for working out the net by parts. From the author's abstract.

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USSR

UDC 519.1

BASKAS, A. S.

"Problems of Distribution of Resources in Network Models"

Vil'nyus, Nauchnyye trudy vysshikh uchebnykh zavedeniy Lit. SSR. Avtomatika i vychislitel'naya tekhnika (Scientific Works of Institutions of Higher Education of the Lithuanian SSR. Automation and Computer Technology), No 2, 1970, "Mintis", pp 89-94

Abstract: The article deals with the problem of minimizing the time for completion of a project given in the form of a network graph where the resources allocated for completion of the project are limited. Two illustrations, bibliography of four titles.

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